

REMARKS

Claims 23-102 are pending in the application, claims 1-22 having been canceled. Claims 23-101 were examined and rejected, and claim 102 is new. Further examination and reconsideration respectfully are requested..

Examiner's Acceptance of the Drawings

The examiner's review and acceptance of the drawings filed on June 20, 2003, is noted with appreciation.

Examiner's Consideration of Applicants' Information Disclosure Statement

The examiner's acknowledgement of the Information Disclosure Statement filed on November 14, 2003, is noted with appreciation.

Explanation of Applicants' Amendment

Applicant has amended the present application by canceling claims 1-22, without prejudice to their being reintroduced in a continuing application. None of the pending claims have been amended in any respect, and the limitations of the remaining pending claims have not been narrowed either expressly or implicitly in any respect. New claim 102 is supported by the specification as filed; see the subparagraph beginning on page 22, line 29.

Claims 23-41 and 61-76 Are Not Obvious Over the Applied References

Claims 23-41 and 61-76, among other pending claims, were rejected by the examiner as obvious over any one of US Patent No. 5,532,679 issued to Baxter Jr., or US Patent No. 5,132,686 issued to Witte, or US Patent No. 5,633,644 issued to Schussler et al., or the publication to Zhifu et al., or the admitted prior art; in view of the publication to Raizer et al. The rejection is traversed.

At the outset, applicants wish to point out that they have made no admission of prior art by the mere inclusion of material in the Background section of the application.

Regardless, the examiner has cited a number of other references upon which the rejection is based, to which applicants now respond.

Independent claim 23 is a method claim pertinent to determining the presence of an oil spill, and claims 24-41 are dependent therefrom. Independent claim 61 is an apparatus claim pertinent to a system for determining the presence of an oil spill, and claims 62-76 are dependent therefrom. These claims may be better understood by considering portions of the present application upon which they read, including FIG. 2 and associated text, as well as the section of the present application entitled "Data Collection and Analysis" which begins on page 22, line 24. FIG. 2 shows a number of satellite sensor units 202 which collect raw data for their respective local areas, a main unit 204, and a control station 206. The data collection and analysis aspects of the system of FIG. 2 are described in, for example, the section of the present application entitled "Data Collection and Analysis," which begins on page 22, line 24. Although directed to one possible approach to handling data flow and information handling, the summary information in Table II is illustrative and is reproduced below for the examiner's convenience.

Table II – Data Flow

DATA FLOW	Satellite field	Main field	Control Station	End user
Data collection	primary and secondary	primary and secondary	n/a	n/a
Data processing	Processor, algorithm, data-fusion, emergency data storage	Processor, algorithm, data-aggregation, database (SCADA), data compression, emergency data storage	Processor, algorithm, data consolidation database (SCADA), add-in programs, emergency data storage	n/a
Information Display	n/a	SCADA	SCADA and presentation software	Oil Spill Presentation software
Transmission media	UHF (in) UHF (out)	UHF (in) satellite (out)	satellite (in) Internet (out)	Internet (in/out)

As shown in Table II, the oil spill identification system design is structured in 4 parts according to the physical location of the elements. Three of the four parts are also shown in FIG. 2, namely Satellite Fields, Main Fields and Control Station. Satellite Fields are described further beginning on page 27, line 27; Main Fields are described further beginning on page 28, line 3; and the Control Station is described further beginning on page 28, line 25.

Method claim 23 comprises remotely monitoring a water surface at a first location for the presence of oil to produce first location monitoring data, and remotely monitoring a water surface at a second location for the presence of oil to produce second location monitoring data. In the FIG. 2 embodiment, for example, at least one of the satellite sensor units 202 and the main unit 204 collect primary data from their respective local areas. Claim 23 further comprises transmitting the first location monitoring data to a receiver at the second location. In the FIG. 2 embodiment, for example, at least one of the satellite sensor units 202 transmits its primary data to a main unit 204. Claim 23 further comprises transmitting information related to the first and second location monitoring data to a control station. In the FIG. 2 embodiment, for example, the main unit 204 transmits secondary data derived from the primary data from both local areas to the control station 206.

System claim 61 comprises a first monitor unit at a first, fixed offshore location for remotely monitoring a water surface at the first location, the first remote monitor unit producing first location monitoring data, and a second monitor unit at a second, fixed offshore location for remotely monitoring a water surface at the second location, the second monitor unit producing second location monitoring data. In the FIG. 2 embodiment, for example, at least one of the satellite sensor units 202 and the main unit 204 collect primary data from their respective local areas. Claim 61 further comprises a first transmitter at the first location coupled to receive the first location monitoring data and to transmit the first location monitoring data to the second location, and a receiver at the second location to receive the first location monitoring data. In the FIG. 2

embodiment, for example, at least one of the satellite sensor units 202 transmits its primary data to a main unit 204. Claim 23 further comprises a second transmitter at the second location coupled to transmit information derived from the first and second location monitoring data to a control station. In the FIG. 2 embodiment, for example, the main unit 204 transmits secondary data derived from the primary data from both local areas to the control station 206.

The invention of independent claims 23 and 61 overcomes a problem with known systems. While known systems may be useful for oil spills in a very specific localized area, they are not practical for monitoring for oil spills over a large area. The problem is identified in the Background section of the present application at page 2, lines 3-13.

Currently, aircraft and ships may be used in oil-spill detection. Aircraft have the capability of investigating large areas. However, the use of aircraft is expensive. A ship is a more cost-effective way to detect oil spills. ... Accordingly, a single ship is capable of overlooking only a very small area. Hence, it necessary to use several ships in order to be able to detect the oil spill at an early stage and it is also necessary to have the ships at sea all the time.

An advantage of the present invention as set forth in claims 23 and 61 is that it solves this problem. The advantage is explained in the present application on page 20, lines 14-25.

The oil spill identification system concept provides online, remote monitoring of off shore installation in any location of the world based on the new generation of communication satellites and the ongoing developments in the Internet. The main requirement to the data transmission system is to provide near real-time data with a low cost of operation. Considerations of optimal coverage at the lowest costs leads to the consideration of different communication media according to the application:

- i) Off-shore data transmission over short distances from satellite units to main unit:
- ii) Off-shore data transmission over long distances from main unit to control station
- iii) Onshore data transmission from control station to user.

Mindful of these considerations, the examiner should now appreciate that claims 23 and 61 are not obvious over the applied references. A prima facie case of obviousness requires that three basic criteria be established. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. See MPEP § 2142, Eighth Edition, Rev. 2, May 2004, page 2100-108.

The references applied by the examiner do not establish the required elements for a proper showing of obviousness. Basically, the teachings of these references do not go beyond direct communication between some sort of central control station and one or more data measuring devices. However, these methods and systems either require extensive local processing or high bandwidth transmissions, both of which are expensive to deploy on a large scale basis. This is precisely the problem that the present invention solves by enabling location monitoring on a large scale but at relatively low cost.

None of the references alone or in combination teach or suggest the data collection and analysis aspects of the claimed invention. Baxter Jr. discloses a floating buoy system where the oil is sensed with direct contact to the water and the oil. The patent discloses radio communication between the buoys and a control station. Witte discloses a specific type of device, a forward looking radar for two-dimensional imaging of land or marine surfaces from flying or stationary carriers in a forward lying sector region. An antenna is made up of a plurality of horn antennas, each of which is evaluated separately digitally so that by correlation of a specific predetermined reference function, a digital processing is carried out for each angular region. Schussler et al. discloses sensing of icebergs and oil from SAR satellites. The system gives a repetition rate of three hours in the North Sea region with nine satellites. A data processing center

processes information from all satellites and gives a warning if collision with icebergs is foreseen or oil spills are detected. Zhifu et al. discloses a basic remote sensing of oil on a water surface and a series of tests with an airborne 36 GHz microwave radiometer. Raizer et al. discloses that the combination of a radar and a radiometer is a good sensor combination with the possibility of detecting oil slick thickness. As is apparent, the teachings of these references do not go beyond direct communication between some sort of central control station and a data measuring device. The rejection should be withdrawn.

While the dependent claims may recite additional limitations of independent patentable significance, discussion of their independent patentability is moot in view of the remarks made in connection with the independent claims.

*Claims 42-60 Are Not Obvious Over the
Applied References*

Claims 42-60, among other pending claims, were rejected by the examiner as obvious over any one of US Patent No. 5,532,679 issued to Baxter Jr., or US Patent No. 5,132,686 issued to Witte, or US Patent No. 5,633,644 issued to Schussler et al., or the publication to Zhifu et al., or the admitted prior art; in view of the publication to Raizer et al. The rejection is traversed.

Independent claim 42 is a method claim pertinent to a method of detecting an oil spill at an offshore location, and claims 43-60 are dependent therefrom. Claim 42 includes the limitation "combining the first and second detection data to form fused detection data" and the limitation "determining whether oil is present on the water surface at the offshore location based on the fused detection data." Since the examiner has not identified any disclosure whatsoever in any of the applied references about fused data, or any suggestion or motivation for applying data fusion to detection data, claims 42-60 cannot be said to be obvious over the references. The rejection should be withdrawn.

While the dependent claims may recite additional limitations of independent patentable significance, discussion of their independent patentability is moot in view of the remarks made in connection with the independent claims.

*Claims 77-101 Are Not Obvious Over the
Applied References*

Claims 77-89 and 90-101, among other pending claims, were rejected by the examiner as obvious over any one of US Patent No. 5,532,679 issued to Baxter Jr., or US Patent No. 5,132,686 issued to Witte, or US Patent No. 5,633,644 issued to Schussler et al., or the publication to Zhifu et al., or the admitted prior art; in view of the publication to Raizer et al. The rejection is traversed.

Independent claim 77 is an apparatus claim pertinent to an oil spill detector for detecting oil spills from a ship-borne platform, and claims 78-89 are dependent therefrom. Independent claim 90 is a method claim pertinent to a ship-borne method of detecting an oil spill, and claims 91-101 are dependent therefrom. Claim 77 includes the limitation "wherein the oil spill sensor unit compensates for motion of the ship so as to increase accuracy of the output signal" and claim 90 includes the limitation "compensating for motion of the ship in at least one of taking and analyzing data from at least the MWR sensor." Since the examiner has not identified any disclosure whatsoever in any of the applied references about compensating for ship motion, claims 77-101 cannot be said to be obvious over the references. The rejection should be withdrawn.

While the dependent claims may recite additional limitations of independent patentable significance, discussion of their independent patentability is moot in view of the remarks made in connection with the independent claims.

Conclusion

In view of the foregoing amendments, it is believed that the application is now in condition for allowance. Applicant respectfully requests favorable reconsideration and the timely issuance of a Notice of Allowance. If a telephone conference would be helpful

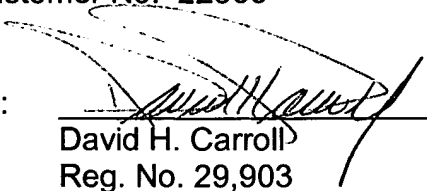
in resolving any issues concerning this communication, please contact the undersigned at (952) 253-4135.

Respectfully submitted,

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Date: September 8, 2004

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